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EXAMINER	
PATEL, ASHOKKUMAR B	

ART UNIT	PAPER NUMBER
2449	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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Office Action Summary	Application No.	Applicant(s)
	09/982,721	SLOCOMBE ET AL.
	Examiner	**Art Unit**
	ASHOK B. PATEL	2449

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 09/08/2009.

2a)☒ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-46 is/are pending in the application.

4a) Of the above claim(s) 8,10-13 and 18-29 is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-7,9,14-17, and 30-46 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-46 are subject to examination. Claims 8, 10-13 and 18-29 are canceled.

Response to Arguments

2. Applicant's arguments filed 09/08/2009 have been fully considered but they are not persuasive for the following reasons:

Applicant's argument:

"Thus, at least in this respect, the RFC reference teaches away from the claim 1 operation of" discontinuing advertising the common address."

"Thus, neither the Neighbor Solicitation nor the Neighbor Advertisement behaviors described in the RFC reference teach or suggest the claim 1 operation of" discontinuing advertising a common address."

The Examiner attempts to draw a comparison between the "least busy server" technique of Lamberton and the 'overload' metric recited in claim 1. This comparison is incorrect. The load-balancing technique used in Lamberton does not determine whether a server system is too busy to service new requests (e.g., by using an overload metric). Instead, the Lamberton technique selects a "least busy server" by comparing the relative activity levels among the servers. Note that the non-selected (or non-"least busy") servers in Lamberton may still be capable of handling new requests even though these servers were not deemed to be the least active. As such, the Lamberton load-balancing technique is incapable of determining whether a particular server (or cluster of servers) is overloaded and should not have any new requests routed thereto."

Examiner's response:

Lamberton teaches at col. 6, line 18-32," Whenever the initial request reaches the load balancer [310], it is dispatched to one of the servers in the cluster of servers [320]. The decision of routing towards one particular server, like server [313] in this example, is the prime job of the load balancer. The metric used to decide which server is to be selected at a given instant depends on the design of the load balancer which is assumed to collect from all the servers, at regular intervals, performance information regarding their level of activity. In broad general terms, it can be said that the least busy of the servers is selected in an attempt to indeed reach the goal of balancing the workload equally over all the servers. The invention does not, per se, interfere with this process which is under the sole responsibility of the load balance."

Thus, load balancer of Lamberton does **"discontinuing device associated with a server system determined to have a load characteristic that exceeds the predefined overload metric."**

RFC teaches 7.2.7, "From the perspective of Neighbor Discovery, anycast addresses are treated just like unicast addresses in most cases. Because an anycast address is syntactically the same as a unicast address, nodes performing address resolution (DNS devices) or Neighbor Unreachability Detection on an anycast address treat it as if it were a unicast address. No special processing takes place.", "As with unicast addresses, Neighbor Unreachability Detection ensures that a node quickly detects when the current binding for an anycast address becomes invalid."

RFC teaches at 7.3," Neighbor Unreachability Detection is used for all paths between hosts and neighboring nodes, including host-to-host, host-to-router, and router-to-host communication. Neighbor Unreachability Detection may also be used between routers, but is not required if an equivalent mechanism is available, for example, as part of the routing protocols. And "Neighbor Unreachability Detection ensures that a node quickly detects when the current binding for an anycast address becomes invalid."

Examiner interprets thus "anycast address" is the "common address" and "Neighbor Unreachability Detection" ensuring the binding with anycast address, that is "common address", as "invalid."

Thus combination of RFC and Lamberton, with RFC teaching detecting "invalidity of binding to anycast address" and with Lamberton teaching "discontinuing the device associated with the binding address", teaches the claim limitation as explained below by the Examiner.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1, 2, 4, 14, 16, 17, 30, 31, 34, 35, 38, 39 and 42-46 are rejected under 35 U.S.C. 103(a) as being Unpatentable over WO 2071720 (hereinafter Rajahalme) in view of RFC 2461 (hereinafter RFC) and Lamberton et al.(hereinafter Lamberton)(US 6, 779, 017) , further in view of Yates et al. (hereinafter Yates) (US 6, 167, 438)

Referring to claim 1,

Rajahalme teaches a method of content delivery in a network, comprising:

"associating each of a plurality of devices (i.e. multiple anycast agents) in a System with at least one server system (page 2. lines 26-26, "For any assigned anycast address, there is a longest address prefix P that identifies the topological region in which all interfaces belonging to that anycast address reside. Possible uses of anycast addresses are to identify the set of routers attached to a particular subnet, or the set of routers providing entry into a particular routing domain.", Fig. 3);

assigning to the devices a common address (page 10, lines 14-22, "Note that if there is only one anycast agent, there is no real anycast addressing based routing delivery being used. However, there could be many anycast agents serving the same anycast address, and anycast address delivery would be used in this case to reach one anycast agent for each anycast addressed service request. If multiple anycast agents are used to serve the same anycast address, the anycast agent receiving the "Home Binding" from the server would need to synchronize this Binding information with other anycast servers, since any one of the agents may receive anycast addressed service requests for the anycast address in question." , page 9, line 22-26, "In this anycast agent scenario, the anycast address in question is routed by the (other) routers to the anycast agent managing the "Anycast Group" defined by that address. The individual servers wishing to join the anycast group will then send a binding update message to

the anycast agent 6, possibly using the anycast address itself as the destination address of the binding update.");

monitoring one or more load characteristics of one or more of the server systems in the network (page 5, line 16-21, A load or capacity information provided by the binding update function or a network topology information may be used for selecting a data source for a client sending a request. Additionally, a binding update with zero life-time may be sent to the network node for each binding initiated by a data source, if the data source needs to by taken down.", page 10, lines 1-6, “Additionally, the servers S.sub.1 21 to S.sub.3 23 can include specific options in the binding update informing the anycast agent 6 on load, capacity, etc. information of the service(s) being provided by the server. This could be utilized by the anycast agent 6 in deciding to which server to assign each client. The anycast agent 6 could also use the network topology information it may have, when choosing a server for a client sending the request.”)

Rajahalme is silent about DNS devices and advertising, by each of the DNS devices, the common address within the network, determining if one or more of the load characteristics exceeds a predefined overload metric; and

discontinuing advertising of the common address by each DNS device associated with a cache server system determined to have a load characteristic that exceeds the predefined overload metric.

RFC teaches at chapter 7.2.7 DNS devices and “advertising, by each of the DNS devices, the common address within the network ; and discontinuing advertising of the common address by each device associated with system”. (NOTE: From the

perspective of Neighbor Discovery, **anycast addresses** are treated just like unicast addresses in most cases. Because an anycast address is syntactically the same as a unicast address, **nodes performing address resolution** **(DNS devices)** or Neighbor Unreachability Detection on an anycast address treat it as if it were a unicast address. No special processing takes place.", "As with unicast addresses, Neighbor Unreachability Detection ensures that a node quickly detects when the current binding for an anycast address becomes invalid." (Thus, teaches "**the common address is assigned to the DNS devices, and it is the DNS devices that perform the steps of advertising and discontinuing advertising the common address** ')

Both Rajahalme and RFC are silent about determining if one or more of the load characteristics exceeds a predefined overload metric; and discontinuing device associated with a server system determined to have a load characteristic that exceeds the predefined overload metric.

Lamberton teaches determining if one or more of the load characteristics exceeds a predefined overload metric; and discontinuing device associated with a server system determined to have a load characteristic that exceeds the predefined overload metric (col. 6, line 23-27, "The metric used to decide which server is to be selected at a given instant depends on the design of the load balancer which is assumed to collect from all the servers, at regular intervals, performance information regarding their level of activity.")

To install the multiple anycast agents that are used to serve the same anycast address of **Rajahalme** into the Domain Name System , with not only load sharing but

load balancing, would have been obvious to one of ordinary skill in the art, in view of the teachings of **RFC and Lamberton** since all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods **(i.e. multiple anycast agents , load sharing and balancing as well as anycast neighbor advertisements)** with no change in their respective functions, and the combination would have yielded nothing more than predictable results to one of ordinary skill in the art at the time of the invention, i.e., one skilled in the art would have recognized that the **load sharing and balancing as well as anycast neighbor advertisements)** used in **RFC and Lamberton** would allow the multiple anycast agents of **Rajahalme** to quickly detect when the current binding for an anycast address becomes invalid based on the load metric.

Now, please note that any of the above references do not teach it's association with at least one **cache** server system.

Yates teaches this system in Fig.1, where in the servers of Rajahalme be replaced with Cache servers.

It would have been obvious to one of ordinary skill in the art to do exactly that because as Yates puts it at col. 4, line 53-59, "The cache servers can also be used to host replicas of popular documents such as databases, search engine index files, and the like, by acting as load splitters from the service provider perspective. In other words, database providers can arrange to have their documents placed into the network, pushing out data closer to the clients that desire access to it, wherever the best placements might be."

Referring to claim 2,

Rajahalme teaches method of claim 1, wherein the common address is an anycast address (page 10, lines 1-6).

Referring to claim 4,

Rajahalme teaches method of claim I, wherein the server systems are geographically distributed across the network (page 10, lines 14-22).

Now please note that any of the above references do not teach it's association with at least one **cache** server system.

Yates teaches this system in Fig.1, where in the servers of Rajahalme be replaced with Cache servers.

It would have been obvious to one of ordinary skill in the art to do exactly that because as Yates puts it at col. 4, line 53-59, "The cache servers can also be used to host replicas of popular documents such as databases, search engine index files, and the like, by acting as load splitters from the service provider perspective. In other words, database providers can arrange to have their documents placed into the network, pushing out data closer to the clients that desire access to it, wherever the best placements might be."

Referring to claim 14,

Rajahalme-RFC- Lamberton -Yates teaches the method of claim 1, further comprising after discontinuing advertisement by a DNS device for an associated cache (Yates :Cache) server system having a load characteristic that exceeds the predefined overload metric, restarting advertising when the load characteristic decreases below the

predefined overload metric (RFC chapter 7.2.7, NOTE: From the perspective of Neighbor Discovery, **anycast addresses** are treated just like unicast addresses in most cases. Because an anycast address is syntactically the same as a unicast address, **nodes performing address resolution (DNS devices)** or Neighbor Unreachability Detection on an anycast address treat it as if it were a unicast address. No special processing takes place.", "As with unicast addresses, Neighbor Unreachability Detection ensures that a node quickly detects when the current binding for an anycast address becomes invalid.").

Referring to claim 16,

Rajahalme-RFC- Lamberton –Yates teaches the method as recited in claim 3, further comprising storing, by each of the routers, multiple routes in association with the common address in a routing table.(Rajahalme: page 10, lines 14-22, "Note that if there is only one anycast agent, there is no real anycast addressing based routing delivery being used. However, there could be many anycast agents serving the same anycast address, and anycast address delivery would be used in this case to reach one anycast agent for each anycast addressed service request. If multiple anycast agents are used to serve the same anycast address, the anycast agent receiving the "Home Binding" from the server would need to synchronize this Binding information with other anycast servers, since any one of the agents may receive anycast addressed service requests for the anycast address in question.")

Referring to claim 17,

Rajahalme-RFC- Lamberton –Yates teaches the method as recited in claim 16, further comprising: receiving a DNS resolution request at one of the routers, wherein the request specifies the common address and requests resolution of a DNS name; selecting a route representing the shortest network distance to one of the DNS devices (RFC: page 4 “Anycast Address: - an identifier for a set of interfaces (typically belonging to different nodes). A packet sent to an anycast address is delivered to one of the interfaces identified by that address (the "nearest" one, according to the routing protocol's measure of distance); and resolving the DNS name to a unique address of the cache: server system associated with the one of the DSN devices.(Rajahalme: page 10, lines 14-22, “Note that if there is only one anycast agent, there is no real anycast addressing based routing delivery being used. However, there could be many anycast agents serving the same anycast address, and anycast address delivery would be used in this case to reach one anycast agent for each anycast addressed service request. <u>If multiple anycast agents are used to serve the same anycast address, the anycast agent receiving the "Home Binding" from the server would need to synchronize this Binding information with other anycast servers, since any one of the agents may receive anycast addressed service requests for the anycast address in question.</u>”)

Referring to claim 30,

Claim 30 is a claim to system for content delivery in a network carrying out the method of claim 1. Therefore claim 30 is rejected for the reasons set forth for claim 1.

Referring to claim 31,

Claim 31 is a claim to system for content delivery in a network carrying out the method of claim 14. Therefore claim 31 is rejected for the reasons set forth for claim 14.

Referring to claim 34,

Claim 34 is a claim to computerized device for content delivery in a network carrying out the method of claim 1. Therefore claim 34 is rejected for the reasons set forth for claim 1.

Referring to claim 35,

Claim 35 is a claim to computerized device for content delivery in a network carrying out the method of claim 14. Therefore claim 35 is rejected for the reasons set forth for claim 14.

Referring to claim 38,

Claim 38 is a claim to computer program product including a computer-readable medium having instructions stored thereon for performing content delivery operations in a network in accordance with the method of claim 1. Therefore claim 38 is rejected for the reasons set forth for claim 1.

Referring to claim 39,

Claim 39 is a claim to computer program product including a computer-readable medium having instructions stored thereon for performing content delivery operations in a network in accordance with the method of claim 14. Therefore claim 39 is rejected for the reasons set forth for claim 14.

Referring to claim 42,

Rajahalme-RFC- Lamberton –Yates teaches the method as in claim 1, wherein advertising, by each of the DNS devices, the common address within the network includes indicating that content :is available for retrieval by end user systems (Rajahalme, page 10, lines 14-22, “Note that if there is only one anycast agent, there is no real anycast addressing based routing delivery being used. However, there could be many anycast agents serving the same anycast address, and anycast address delivery would be used in this case to reach one anycast agent for each anycast addressed service request. If multiple anycast agents are used to serve the same anycast address, the anycast agent receiving the "Home Binding" from the server would need to synchronize this Binding information with other anycast servers, since any one of the agents may receive anycast addressed service requests for the anycast address in question.” from each associated cache server system (Yates) communicatively connected to the network (RFC chapter 7.2.7, NOTE: From the perspective of Neighbor Discovery, **anycast addresses** are treated just like unicast addresses in most cases. Because an anycast address is syntactically the same as a unicast address, **nodes performing address resolution** **(DNS devices)** or Neighbor Unreachability Detection on an anycast address treat it as if it were a unicast address. No special processing takes place.”, “As with unicast addresses, Neighbor Unreachability Detection ensures that a node quickly detects when the current binding for an anycast address becomes invalid.”).

Referring to claim 43,

Rajahalme-RFC- Lamberton –Yates teaches the method as in claim 42, wherein the cache server system comprises a single cache server (Yates, Fig.1).

Referring to claim 44,

Rajahalme-RFC- Lamberton –Yates teaches the system as in claim 30, wherein each DNS device advertises the common address within the network to indicate that the content is available for retrieval by end user systems (Rajahalme, page 10, lines 14-22, "Note that if there is only one anycast agent, there is no real anycast addressing based routing delivery being used. However, there could be many anycast agents serving the same anycast address, and anycast address delivery would be used in this case to reach one anycast agent for each anycast addressed service request. If multiple anycast agents are used to serve the same anycast address, the anycast agent receiving the "Home Binding" from the server would need to synchronize this Binding information with other anycast servers, since any one of the agents may receive anycast addressed service requests for the anycast address in question." from each associated cache server system (Yates) communicatively connected to the network (RFC chapter 7.2.7, NOTE: From the perspective of Neighbor Discovery, **anycast addresses** are treated just like unicast addresses in most cases. Because an anycast address is syntactically the same as a unicast address, **nodes performing address resolution** **(DNS devices)** or Neighbor Unreachability Detection on an anycast address treat it as if it were a unicast address. No special processing takes place.", "As with unicast addresses, Neighbor Unreachability Detection ensures that a node quickly detects when the current binding for an anycast address becomes invalid.").

Referring to claim 45,

Rajahalme-RFC- Lamberton –Yates teaches the system as in claim 44, wherein the cache server system comprises a single cache server. (Yates, Fig.1).

Referring to claim 46,

Rajahalme-RFC- Lamberton –Yates teaches the system as in claim 30, wherein the cache server system comprises a plurality of cache servers. (Yates, Fig.1).

5. Claims 3, 5-7, 9, 15, 32, 33, 36 ,37, 40 and 41 are rejected under 35 U.S.C. 103(a) as being Unpatentable over WO 2071720 (hereinafter Rajahalme) in view of RFC 2461 (hereinafter RFC) and Lamberton et al.(hereinafter Lamberton)(US 6, 779, 017) , further in view of Yates et al. (hereinafter Yates) (US 6, 167, 438), as applied to above claims and further in view of Garcia-Luna-Aceves (hereinafter Garcia) (US 2006/0271705 A1).

Referring to claims 3, 5-7, 9 and 15,

Keeping in mind the teachings of all these references fail to teach what Garcia teaches the method of claim 1, wherein the advertising act comprises: sending routing information to a plurality of routers in the network in accordance with the Border Gateway Protocol (BGP) (para. [0065], "A Web router may be co-located with a Web server, a Web cache, or an original content server. In one embodiment of the present invention, a Web router may be implemented in software to be executed by a general purpose (or special purpose) computer processor, or it may be implemented as part of the software of a router or Web cache. In another embodiment of the present invention, some or all of the Web router functionality may be implemented in hardware.",

para.[0082], "In an embodiment of the present invention, Web routers use routing information provided by the Border Gateway Protocol (BGP) and any of the intra-domain routing protocols (e.g., OSPF, EIGRP) running in the routers attached to the same local area networks where the Web routers reside to derive distances to client address ranges.")

Garcia teaches the method of claim 1, wherein the DNS devices are collocated with the cache server systems with which the DNS devices are associated. (para.[0086], "The specific algorithm that a Web router executes to compute the distance to the nearest Web cache storing a copy of an information object depends on the routing information that the Web routers use to compute distances to other Web routers, which are collocated with the Web caches storing information objects.")

Garcia teaches the method of claim 1, wherein each cache server system and associated DNS devices are located in a different Internet Service Provider Point of Presence. (para.[0062], "For example, clients 105 may have accounts with local Internet service providers (ISPs) 110 that enable the clients to connect to the Internet using conventional dial-up or one of a variety of high-speed connections (e.g., DSL connections, cable connections, hybrids involving satellite and dial-up connections, etc.). ISPs 110, in turn, may provide direct connections to the Internet or, as shown, may rely on other service providers 120, 130, 140, to provide connections through to a set of high-speed connections between computer resources known as a backbone 150.", para. [0067] To reduce communication and processing overhead in Web routers, a topology of Web routers is defined, such that a given Web router has as its neighbor

Web routers a subset of all the Web routers in the system (where the term system refers to all or a portion of the virtual network for Web routers discussed above). A Web router may thus be configured with its set of neighbor Web routers. Such a configuration may be a table of neighbor Web routers which is defined by a network service provider and/or is dynamically updated.")

Garcia teaches the method of claim 1, wherein each cache server system and associated DNS device is located at or near an entry point of the network. (para.[0062],"For example, clients 105 may have accounts with local Internet service providers (ISPs) i 10 that enable the clients to connect to the Internet using conventional dial-up or one of a variety of high-speed connections (e.g., DSL connections, cable connections, hybrids involving satellite and dial-up connections, etc.). ISPs 110, in turn, may provide direct connections to the Internet or, as shown, may rely on other service providers 120, 130, 140, to provide connections through to a set of high-speed connections between computer resources known as a backbone 150. ", para. [0067] To reduce communication and processing overhead in Web routers, a topology of Web routers is defined, such that a given Web router has as its neighbor Web routers a subset of all the Web routers in the system (where the term system refers to all or a portion of the virtual network for Web routers discussed above). A Web router may thus be configured with its set of neighbor Web routers. Such a configuration may be a table of neighbor Web routers which is defined by a network service provider and/or is dynamically updated.")

Garcia teaches the method of claim 1, wherein at least one of the cache server systems comprises at least two cache serves connected in a cluster, and wherein the at least two cache servers are coupled to a switch usable to select from among the at least two cache serves based on a selection policy. (para.[0073], "In a further embodiment, one of the following four mechanisms, or, a combination of some of the following four mechanisms, is or may be used to communicate the best Web cache or content server, or the set of Web caches, which should serve a client's request: [0074] (1) direct cache selection; [0075] (2) redirect cache selection; [0076] (3)remote DNS cache selection; and [0077] (4) client DNS cache selection. These approaches are disclosed in co-pending and commonly-owned U.S. Provisional Application No. 60/200,404, entitled "System and Method for Using a Mapping Between Client Addresses and Addresses of Caches to Support Content Delivery", filed Apr. 28, 2000 by J. J. Garcia-Luna-Aceves and Bradley R. Smith, the complete disclosure of which is hereby incorporated by reference.")

Garcia teaches the method of claim 1, further comprising, if a DNS device discontinues advertisement of it associated cache server system, continuing to use the cache server system by another system that has already resolved a DNS name to the DNS device, until the DNS name expires(para,[0086], "The specific algorithm that a Web router executes to compute the distance to the nearest Web cache storing a copy of an information object depends on the routing information that the Web routers use to compute distances to other Web routers, which are collocated with the Web caches storing information objects. A Web router is informed by its local Web caches of the load

in the Web caches and the information objects stored in the Web caches. Hence, a Web router knows that its distance to information objects stored in local Web caches is the latency incurred in obtaining those objects from the local Web caches, which is a direct function of the load in those Web caches. Given that a Web router executes a routing algorithm enabling the Web router to know its distance to other Web routers, a Web router selects the nearest Web cache storing a copy of an information object by comparing the local distance to the information object (which is the latency incurred by a local Web cache if the object is stored locally or infinity if the object is not stored locally) with the reported matches of object identifiers to Web caches reported by its neighbor Web routers. The object-cache match report for a given information object specifies the information object identifier, the Web cache where the information object is stored, the Web router that is local to that Web cache, and the distance to the Web cache. The distance specified in the object-cache match report includes explicitly or implicitly the distance from the neighbor Web router to the Web cache specified in the report, plus the load of the Web cache specified in the report. The Web router then chooses the match of information object to Web cache that produces the minimum distance to the Web cache storing the object.")

Therefore it would have been obvious to use the teachings of Garcia such as, the BGP, collocating DNS devices with the cache server systems, locating the cache server system and associated DNS device at or near an entry point of the network, DNS devices are located in a different Internet Service Provider Point of Presence in the

combined system as presented in claim 1, since all these techniques are known to provide efficient distribution of information and protocols to the consumers.

Referring to claim 32,

Claim 32 is a claim to computerized device for content delivery in a network carrying out the method of claim 15. Therefore claim 32 is rejected for the reasons set forth for claim15.

Referring to claim 33,

Claim 33 is a claim to system for content delivery in a network carrying out the method of claim 3. Therefore claim 33 is rejected for the reasons set forth for claim 3.

Referring to claim 36,

Claim 36 is a claim to computerized device for content delivery in a network carrying out the method of claim 15. Therefore claim 36 is rejected for the reasons set forth for claim15.

Referring to claim 37,

Claim 37 is a claim to computerized device for content delivery in a network carrying out the method of claim 3. Therefore claim 37 is rejected for the reasons set forth for claim 3.

Referring to claim 40,

Claim 40 is a claim to computer program product including a computer-readable medium having instructions stored thereon for performing content delivery operations in a network in accordance with the method of claim 15. Therefore claim 40 is rejected for the reasons set forth for claim 15.

Referring to claim 41,

Claim 41 is rejected for the reasons set forth for claims 1, 14 and 15.

Conclusion

Examiner's note: Examiner has cited particular columns and line numbers in the references as applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings of the art and are applied to the specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant in preparing responses, to fully consider the references in entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the Examiner.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ASHOK B. PATEL whose telephone number is (571)272-3972. The examiner can normally be reached on 6:30 am-4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenton Burgess can be reached on (571) 272-3949. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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/Ashok B. Patel/
Primary Examiner, Art Unit 2449